



## Complete Summary

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### GUIDELINE TITLE

Sore throat and tonsillitis.

### BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. Sore throat and tonsillitis. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 May 13 [Various]. [9 references]

## COMPLETE SUMMARY CONTENT

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT  
CATEGORIES  
IDENTIFYING INFORMATION AND AVAILABILITY

## SCOPE

### DISEASE/CONDITION(S)

- Sore throat and tonsillitis
- Peritonsillar abscess

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Treatment

### CLINICAL SPECIALTY

Family Practice  
Internal Medicine  
Otolaryngology  
Pediatrics  
Surgery

### INTENDED USERS

Health Care Providers  
Physicians

## GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collect, summarize, and update the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given treatment recommendations.

## TARGET POPULATION

Children and adults with sore throat and tonsillitis

## INTERVENTIONS AND PRACTICES CONSIDERED

### Diagnosis/Evaluation

1. Clinical assessment, including physical examination of the pharynx, neck palpation, and checking for presence of rash or other focuses of infection
2. Streptococcal culture or rapid test (culture of throat swab) for streptococci
3. Rapid test for mononucleosis
4. Culture for *Neisseria gonorrhoeae*

### Treatment/Secondary Prevention

1. Antibiotics
  - Penicillin V; cephalexin or cefadroxil in case of penicillin allergy
  - Cephalexin or cefadroxil as first line therapy in recurrent infection; clindamycin
2. Analgesics, such as paracetamol, ibuprofen, or lidocaine spray
3. Antibiotics for pharyngeal gonorrhea
4. Drainage and antibiotics for peritonsillar abscess
5. Tonsillectomy

### Recognition and Control of Epidemics

## MAJOR OUTCOMES CONSIDERED

- Duration of symptoms
- Incidence of rheumatic fever, glomerulonephritis, otitis media, and sinusitis
- Overall, bacteriological, and clinical cure rates
- Adverse effects
- Incidence of recurrent throat infection following tonsillectomy

## METHODOLOGY

## METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)  
Hand-searches of Published Literature (Secondary Sources)  
Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the Database of Abstracts of Reviews of Effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

#### NUMBER OF SOURCE DOCUMENTS

Not stated

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

- A. Strong research-based evidence. Several relevant, high-quality scientific studies with homogeneous results.
- B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
- C. Limited research-based evidence. At least one adequate scientific study.
- D. No scientific evidence. Expert panel evaluation of other information.

#### METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

#### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

#### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

#### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

#### COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

#### Basic Rules

- Antibiotics are indicated in infections caused by group A streptococci or gonococci and in severe infections caused by group C or G streptococci. Symptomatic treatment is sufficient for infections caused by other agents.
- A peritonsillar abscess should be identified and treated immediately.
- The following diseases should be recognized:
  - Mononucleosis
  - Pharyngeal gonorrhea
  - Subacute thyroiditis
  - Granulocytopenia (in patients receiving drugs that affect the bone marrow)
- The source of infection should be identified in recurrent tonsillitis
- Epidemics should be recognized and controlled (even those caused by non-A streptococci)

#### Aetiology of Tonsillitis

- Group A streptococci cause 5 to 20% (during epidemics 40%) of all cases of tonsillitis. Prevalence of tonsillitis is lowest during the summer.
- Other streptococci may cause epidemics but no sequelae.
- *Neisseria gonorrhoeae* is a rare cause of tonsillitis (1%).
- *Mycoplasma* and *chlamydia* are detected equally often in asymptomatic as in symptomatic patients, and need not be searched for.
- Mononucleosis is diagnosed in 1 to 2% of the patients.
- *Arcanobacterium* is the causative agent in less than 1% of the cases. The clinical picture resembles scarlet fever. No therapy is indicated.
- In the majority, sore throat has a viral etiology. Viruses can cause high fever, rash, and pharyngeal exudate.

#### Risk Groups

- Streptococci: children above 3 years and young adults (15 to 24 years)
- Mononucleosis: children and young adults
- Gonorrhea: sexually active individuals

## Investigations

- Examination of the pharynx: peritonsillar oedema, exudate, trismus
- Palpation of the neck
  - Enlarged lymph nodes in other locations than the jaw angle: mononucleosis?
  - Enlarged, tender thyroid gland: thyroiditis?
- Rash: viruses, erythrogenic strains of group A streptococci, arcanobacterium?
- Oedema of the eye lids: mononucleosis? See the Finnish Medical Society Duodecim guideline "Mononucleosis."
- Other focuses of infection: sinuses, ears, teeth, lower respiratory tract
- Streptococcal culture or rapid test is the most important investigation. Clinical assessment is not accurate in determining the microbial aetiology.
  - Culture of a throat swab is the most accurate and least expensive method, provided that notification of the result to the patient and delivery of the prescription to the pharmacy are organized effectively.
    - Streptococcal culture also reveals non-A streptococci (no inhibition of haemolysis around a bacitracin disk).
  - If a rapid test is used, a negative result should be confirmed by culture (confirmation of a negative test is not necessary in children under the age of 3 years, as streptococcal disease is uncommon in this age group).
- Rapid test for mononucleosis and culture for *Neisseria gonorrhoeae* as required.

## Organizing the Treatment

- The physician should see all children and those adults who have an underlying disease, pain in the sinuses or in the ear, productive cough, or trismus.
- Adult patients can usually be examined by a nurse, who takes a streptococcal test.
- Antibiotics are indicated only for patients with a positive culture or rapid test for either
  - Group A streptococci, or
  - Any streptococci if the symptoms are severe, particularly during an epidemic.
- If the patient has severe symptoms, a one-day dose of antibiotic can be given while waiting for the result of the bacterial culture. If the result is negative, the antibiotic should be discontinued.

## Drug Therapy in Streptococcal Disease

- Penicillin V 1.5 million units x 2 x 10
- In case of penicillin allergy: oral cephalexin 750 mg x 2 or cefadroxil 1 g x 1 (Deeter et al., 1992; DARE-953519, 1999) [A].
- It is not necessary to start antibiotics immediately: a delay of 1 (-3) day(s) does not increase complications or delay the resolution of acute disease.

- Antibiotics shorten the duration of symptoms somewhat ("Antibiotics for sore throat," 2002) [A] and reduce the risk of rheumatic fever ("Penicillin for secondary prevention of rheumatic fever," 2002) [C].
- An analgesic (Thomas, Del Mar, & Glasziou, 2000; DARE-20018156, 2002) [B] (paracetamol and ibuprofen are the safest) is more effective than antibiotics against symptoms. Pain at swallowing can even be treated with lidocaine spray or gargling solution.
- Non-A streptococci: in patients with severe symptoms and during epidemics, the same medication as for group A streptococci.
- Repeated throat culture is not necessary unless the symptoms recur.
- The patient is no longer infective after 1 day on antibiotics.

#### Drug Therapy for Other Causative Agents

- Pharyngeal gonorrhea often causes only mild symptoms. Remember the provision of free antibiotics for sexually transmitted disease (STD) and tracing of the contacts.
- Mononucleosis should not be treated with antibiotics. Particularly ampicillin should be avoided (rash).

#### Peritonsillar Abscess

- Trismus (difficulty and pain in opening the mouth)
- Difficulty in swallowing and salivation are observed.
- Oedema around and above the tonsils, deviation of the uvula, asymmetry and forward displacement of the soft palate
- Treatment consists of drainage of the abscess (often immediate tonsillectomy) and antibiotics.

#### Recurrent Tonsillitis

- Recurrent sore throat, with positive test for group A streptococci
- Reinfection is the most common cause.
- Throat cultures should be taken both from the patient and all family members.
- Other symptomatic patients at the work place should be traced.
- In recurrent infection first line therapy is cephalexin or cefadroxil, which erase group A streptococci even more efficiently than penicillin (Deeter, et al 1992; DARE-953519, 1999) [A]. Clindamycin (300 mg x 2 for 10 days) also erases group A streptococci and prevents recurrent tonsillitis caused by other bacteria as well.

#### Indications for Tonsillectomy

- Recurrent, confirmed bacterial tonsillitis (>4 x/year), irrespective of the type of bacteria (Marshall, 1998; DARE-988675, 1999) [C]
  - Dates and results of bacterial cultures and rapid tests should be included in the referral.
- Complications of acute tonsillitis: peritonsillar abscess, septicaemia originating from the tonsils
  - A peritonsillar abscess in a patient under 40 years of age is treated by acute tonsillectomy without prior incision.

- Suspicion of malignancy (marked asymmetry or ulceration)
- Airway obstruction caused by tonsils (which may almost touch each other), sleep apnea, disorder of dental occlusion
- Chronic tonsillitis is a relative indication for tonsillectomy. The operation is indicated if the patient continuously suffers from bad breath, sore throat, and gagging, and if the symptoms do not diminish during follow-up.

#### Streptococcal Epidemics

- A streptococcal epidemic should be suspected if
  - There are several patients from the same location OR
  - The same patient has recurrent streptococcal disease.

#### Related Evidence

A single dose of dexamethasone appears to prevent post-operative vomiting for many children having their tonsils removed, without adverse effects ("Steroids for improving recovery," 2003) [B].

#### Definitions:

#### Levels of Evidence

- Strong research-based evidence. Several relevant, high-quality scientific studies with homogeneous results.
- Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
- Limited research-based evidence. At least one adequate scientific study.
- No scientific evidence. Expert panel evaluation of other information.

#### CLINICAL ALGORITHM(S)

None provided

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

- Antibiotics are effective in the prevention of acute rheumatic fever following acute tonsillitis.
- Antibiotics reduce the duration of symptoms of sore throat by about 8 hours overall.
- Tonsillectomy may slightly reduce the incidence of moderate or severe throat infections in children during the first two years after the procedure

### Subgroups of Patients Within Target Population Most Likely to Benefit from These Recommendations

Children under 15 years of age who meet strict criteria have a reduced incidence of throat infection in the two years following tonsillectomy.

### POTENTIAL HARMS

None stated

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. Sore throat and tonsillitis. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 May 13 [Various]. [9 references]

### ADAPTATION



Not applicable: The guideline was not adapted from another source.

#### DATE RELEASED

2001 Apr 22 (revised 2004 May 13)

#### GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

#### SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

#### GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Finnish Medical Society Duodecim. Sore throat and tonsillitis. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2003 Jul 17. Various p.

#### GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: [info@ebm-guidelines.com](mailto:info@ebm-guidelines.com); Web site: [www.ebm-guidelines.com](http://www.ebm-guidelines.com).

#### AVAILABILITY OF COMPANION DOCUMENTS

- EBM guidelines. Evidence-based medicine. Helsinki, Finland: Duodecim Medical Publications, Ltd. 2002. [CD-ROM]
- EBM guidelines. Web site: [www.ebm-guidelines.com](http://www.ebm-guidelines.com).

Available from: Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: [info@ebm-guidelines.com](mailto:info@ebm-guidelines.com); Web site: [www.ebm-guidelines.com](http://www.ebm-guidelines.com).

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on August 28, 2001. The information was verified by the guideline developer as of October 26, 2001. This summary was updated by ECRI on December 29, 2003, and again on September 8, 2004.

## COPYRIGHT STATEMENT

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